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ABSTRACT

It appears that the value of providing students with strategies to activate their prior knowledge base or to build a base if one does not exist is supported by current research. Creating an opportunity to challenge students to call on their collective experiences (prior knowledge) is essential. Through this process, teachers move students from memorizing information to meaningful learning and begin the journey of connecting learning events rather than remembering bits and pieces. Prior knowledge is an essential element in this quest for making meaning. Teachers should remember to: (1) present information which builds background ideas, concepts, and principles; (2) show (do not tell) through demonstrations, multi-media use, and graphics; (3) use outside resources, trips, and speakers; and (4) tell about the topic from personal experience. (RS)

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Increasing Comprehension by Activating Prior Knowledge

by William L. Christen and Thomas J. Murphy

The Research

Research has been conducted to determine the value of providing activities or strategies to assist in providing students with ways to activate their prior knowledge base. Studies looked at three possibilities: (1) building readers' background knowledge; (2) activating readers' existing background knowledge and attention focusing *before* reading; and (3) guiding readers *during* reading and providing review *after* reading.

It appears that when readers lack the prior knowledge necessary to read, three major instructional interventions need to be considered: (1) teach vocabulary as a prereading step; (2) provide experiences; and (3) introduce a conceptual framework that will enable students to build appropriate background for themselves.

Preteaching vocabulary (to increase learning from text materials) probably requires that the words to be taught must be key words in the target passages (Beck, *et al*, 1982; Kameenui, Carnine, *et al*, 1982), that words be taught in semantically and topically related sets so that word meaning and background knowledge improve concurrently (Beck et al., 1982; Stevens, 1982), and that only a few words be taught per lesson and per week (Beck et al., 1982; Kameenui et al., 1982; Stevens, 1982). To be an effective strategy, an extensive and long-term vocabulary strand accompanying a parallel schematic or background-knowledge-development strand is probably called for.

Research on *enriching background knowledge* has demonstrated that activating such knowledge increases comprehension. Graves and his associates (1980; 1983) developed previews for short stories that had, as one component, the building of prior knowledge important to understanding the selection. Data indicated that reading the previews before reading the stories increased students' learning from stories by a significant and impressive amount. Stevens (1982) increased learning from text compared with a control group for 10th-grade students reading a history passage by teaching them relevant background information for that passage. Hayes and Tierney (1982) found that presenting background information related to the topic to be learned helped readers learn from texts regardless of how that background information was presented or how specific or general it was. Alvarez (1990) used case-based instruction to develop students' abilities to assemble and incorporate different knowledge sources in memory. He taught them how to employ thematic organizers and hierarchical concept mapping in their reading.

Additionally, scant attention is paid to the role of the reader's schemata, or background knowledge, when learning from text (Tierney & Pearson, 1985). Yet research clearly emphasizes that for learning to occur, new information must be integrated with what the learner already knows (Rumelhart, 1980).

It appears that providing students with strategies to activate their prior knowledge base or to build a base if one does not exist is supported by the current research. It is our contention that this is one way teachers can have a positive influence on comprehension in their classrooms.

For example, Reutzel and Morgan (1990) advocate two pedagogical alternatives for teachers who wish to improve students' comprehension of causal relations which often are implicit in content area textbooks. Teachers may rewrite the text to make the cohesion relations explicit (a daunting task), or they may assist students in building, modifying, or elaborating their background knowledge prior to reading expository texts. Miholic (1990) outlines the construction of a semantic map for textbooks which he recommends for use at adult, secondary, and college level. For a class of gifted seventh grade students, Davis and Winek (1989) developed a project for building background knowledge so that the students could generate topics for writing articles in history. The teachers devoted one class period a week for eight weeks to various group activities to build background knowledge, culminating in prewriting activities focused on brainstorming for the eighth week. The articles were then written by the students at home.

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Classroom Implications

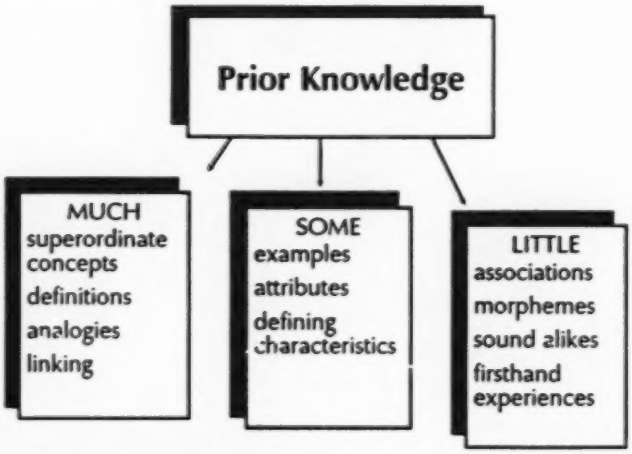
Engaging students in prior knowledge experiences becomes a form in classrooms where teachers value understanding what knowledge students possess. We know that prior knowledge is an important step in the learning process. It is a major factor in comprehension: that is, making sense of our learning experiences. Brain-based research confirms the fact that the learning environment needs to provide a setting that incorporates stability and familiarity. It should be able to satisfy the mind's enormous curiosity and hunger for discovery, challenge, and novelty. Creating an opportunity to challenge our students to call on their collective experiences (prior knowledge) is essential. Through this process we move students from memorizing information to meaningful learning and begin the journey of connecting learning events rather than remembering bits and pieces. Prior knowledge is an essential element in this quest for making meaning.

Level of Prior knowledge

Students generally fall into three categories: *much*, *some*, or *little* prior knowledge. In each instance, the teacher will make specific instructional decisions based on what is discovered in the prior knowledge part of the lesson. To check out what prior knowledge exists about a topic, idea, or concept, you may choose to do some of the following activities:

- *Brainstorm* the topic. Write all the information solicited from the students on the chalkboard, a piece of paper, or transparency.
- *Ask* specific and/or general questions about the topic. See what responses are given.
- *Pose* a *problem* or a *scenario*. Based on this description, find out what the students know about the idea presented.

Once the data is collected, a decision about the appropriate forms of instruction can be made. The following diagram can be helpful:



Teachers should remember to

(1) Present information which builds:

- **Background ideas**
- **Concepts**
- **Principles**

(2) Show, don't tell through—

- **Demonstrations**
- **Multi-media**
- **Graphics**

(3) Use outside resources, trips and speakers

(4) Tell about topic from your experience

(5) Use any combination of the above!

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